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(54) Marking indicia on keytops

(57) The keytops of a keyboard or the like are marked with respective indicia by:

(a) applying a paint or other layer
(b) ablating the layer to form the indicia.

In a first embodiment the body of the key is translucent and the layer is opaque. The indicium is formed by selective removal of the layer by laser engraving, whereby the keytop can be illuminated by light from below passing through the removed portion.

In a further embodiment the layer is of fluorescent material, and the final indicium is formed by removal of the material from areas not forming part of the indicium.

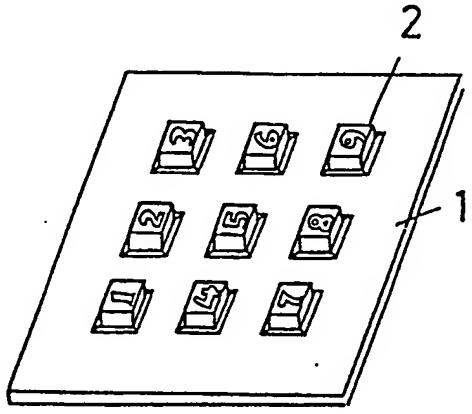

FIG 1

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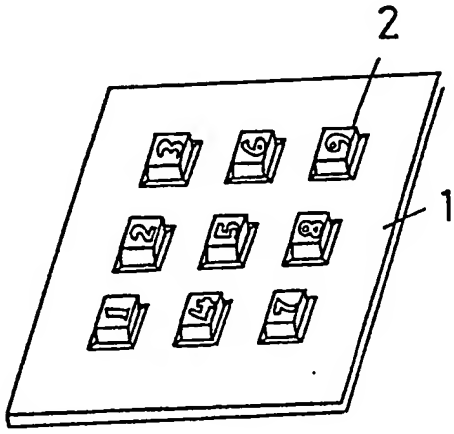

FIG 1

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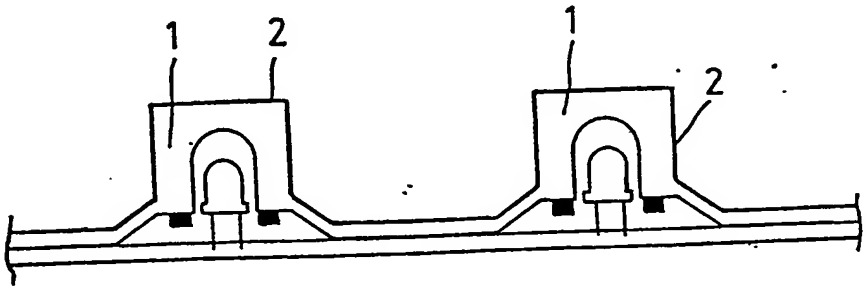

FIG. 2

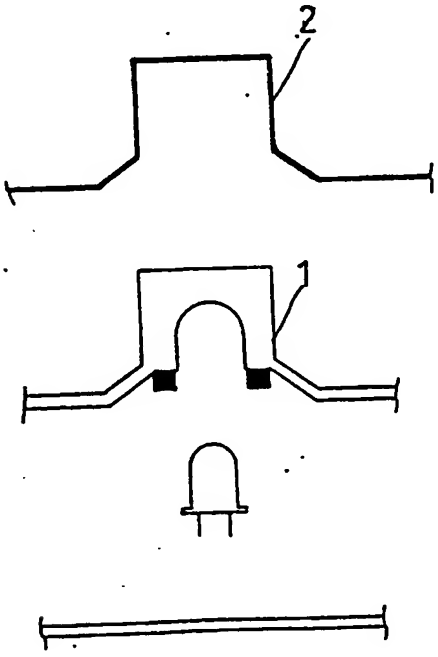

FIG. 3

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Title of the Invention:Structure of key button

Background of the Invention:

The present invention is related to key buttons for keyboards, and more particularly to a structure of key button which has a transparent pattern or sign incised thereon and a lighting emitting diode set therein to project light through the transparent pattern or sign so that the pattern or sign of the key button can be apparently seen in the night.

Keyboard control has been commonly used in controlling the operation a variety of apparatus including thelephone sets, calculators, computers, times, ... etc. One disadvantage of the conventional keyboard structure is that the patterns or signs on the key buttons of a keyboard can not be apparently seen in dark environment. It is therefore, an idea of the present inventor to provide a key button structure which can be apparently identified in the dark.

Summany of the Invention:

According to one embodiment of the present invention, a key button structure comprises a transparent rubber casing made through shape molding process and covered with a layer of opaque paint, wherein a pattern or sign is

incised in the top surface of the key button by means of laser engraving process to remove part of the opaque paint from the rubber casing permitting light to penetrate through the pattern or sign thereon. A light emitting diode may be set in a key button of the present invention to project light through the pattern or sign on such a key button, which light emitting diode may be connected to a power switch when it is used in a calculator or connected to a contact switch on a hand set when it is used in a telephone set.

In another embodimemt of the present invention, a key button structure comprises a rubber casing made through shape molding process and covered with a layer of fluorescent material, wherein a pattern or sign of fluorescent material is raised on the top surface of the key button by means of relief process to remove part of the fluorescent material from the rubber casing permitting the remainder fluorescent material to show a preferred pattern or sign.

BRIEF DESCRIPTION OF THE DRAWINGS:

The present invention will now be described by way of example with reference to the annexed drawings, in which:

Fig. 1 is a perspective view of a keyboard constructed according to the present invention;

Fig. 2 is a partly sectional view of the keyboard of Fig. 1, illustrating the arrangement of a light emitting source in each key button;and

Fig. 3 is a fragmentard view of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS:

Turning now to the annexed drawings in greater detail, a key button in accordance with the present invention comprises a transparent rubber casing 1 made through shape molding process and covered with a layer of opaque paint or fluorescent material 2. After the opaque paint coating 2 is dried, a preferred pattern or sign is engraved on the top of the key button by means of laser engraving procedure, permitting light to penetrate the engraving region where the opaque paint coating 2 is removed according to the preferred pattern or sign. During installation to assemble a keyboard, a light emitting diode or the like is set in the rubber casing 1 of each key button to project light throught the transparent pattern or sign of each key button. Therefore, the pattern or sign on each key button can be apparently seen day or night.

If the present invention is applied in a calculator, the light emitting diodes or the

like in the key buttons of the keyboard of such a calculator can be connected to a common power switch so that they can be turned off to save power consumption when such a calculator is not in use. When the present invention is used in a telephone set, the light emitting diodes or the like in the key buttons of the keyboard of such a telephone set can be connected to a control switch mounted on the hand set thereof so that they can be concomitantly turned on or off when the hand set is picked up or hung on.

As an alternate form of the present invention, a key button may be made of rubber material coated with a layer of fluorescent material and treated through relief process to remove part of the fluorescent material from the key button permitting a preferred pattern or sign of fluorescent coating to be raised on the top of thekey button.

CLAIMS:

1. A key button, comprising a transparent rubber casing made through shape molding process and covered with a layer of opaque paint, wherein a pattern or sign is incised in the top surface of the key button by means of laser engraving process to remove part of said opaque paint form said rubber casing permitting light to penetrate through the pattern or sign thereon.

2. A key button, comprising a rubber casing made through shape molding process and covered with a layer of fluorescent material, wherein a pattern or sign of fluorescent material is raised on the top surface of the key button by means of relief process to remove part of said fluorescent material from said rubber casing permitting the remainder fluorescent material to show a preferred pattern or sign.

3. A key button according to claim 1, substantially as hereinbefore described with particular reference to the drawings.

4. A key button according to claim 2, substantially as hereinbefore described with particular reference to the drawings.

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